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- 25. The etchant as claimed in claim 21, wherein a temperature of the alkali aqueous solution is between 80°C and 87°C. --
- 26. The etchant as claimed in claim 21, wherein a concentration of the alkali is between 40% and 60% in mass basis. --
- 27. The etchant as claimed in claim 21, wherein a concentration of the alkali is between 45% and 55% in mass basis. --
- 28. The etchant as claimed in claim 21, wherein a surface area of the stainless steel is not less than 20 cm<sup>2</sup> per a volume of 1 liter of the alkali aqueous solution. --
- 29. The etchant as claimed in claim 21, wherein a reducing agent having lower oxidation potential compared with an oxidation-reduction potential of a (metal ion)<sup>ss?</sup> existing in the alkali aqueous solution, is dissolved in the alkali aqueous solution. --
- 30. The etchant as claimed in claim 29, wherein the reducing agent is (one kind or not less than two kinds)<sup>more?</sup> selected from the group consisting of dithionite, hypophosphite, boron hydride compound, aldehyde genera, and hydrazine compound. --
- 31. The etchant as claimed in claim 30, wherein the dithionite is sodium dithionite. --
- 32. The etchant as claimed in claim 31, wherein an amount of addition of the dithionite is not less than 2.5g/liter. --
- 33. The etchant as claimed in claim 21, in which silicon is dissolved. --
- 34. The etchant as claimed in claim 33, wherein an amount of dissolution of the silicon is not less than 2g/liter. --
- 35. The etchant as claimed in claim 21, wherein the etchant is prepared by using an alkali resistant container. --
- 36. An etchant of a semiconductor material, in which a concentration of a heavy metal ion is not more than

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$3 \times 10^{-6}\%$  in mass basis. --

-- 37. An etchant of a semiconductor material, in which any one of concentrations of iron ion, copper ion, nickel ion, and chromium ion, is not more than  $5 \times 10^{-7}\%$  in mass basis. --

-- 38. An etching method comprising the step of etching a semiconductor silicon wafer by using an etchant prepared by immersing stainless steel in an alkali aqueous solution for not less than 10 hours. --

-- 39. An etching method comprising the step of etching a semiconductor silicon wafer by using an etchant, in which a concentration of a heavy metal ion is not more than  $3 \times 10^{-6}\%$  in mass basis. --

-- 40. An etching method comprising the step of etching a semiconductor silicon wafer by using an etchant, in which any one of concentrations of iron ion, copper ion, nickel ion, and chromium ion, is not more than  $5 \times 10^{-7}\%$  in mass basis. --

-- 41. A semiconductor silicon wafer, wherein an amount of adhesion of a heavy metal element on a surface after etching in an alkali aqueous solution is not more than  $1 \times 10^{10}$  atoms/cm<sup>2</sup>. --

-- 42. The semiconductor silicon wafer as claimed in claim 39, wherein all of the amounts of adhesion of iron, nickel, chromium, and copper on the surface are not more than  $5 \times 10^8$  atoms/cm<sup>2</sup>. --

091334-01301  
FILED IN 4221560